Course: Database Management System

Real Estate Broker System

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Queries:

1. By using the filters like city code of any city, buyers will be able to view all the properties available for sale in the city.

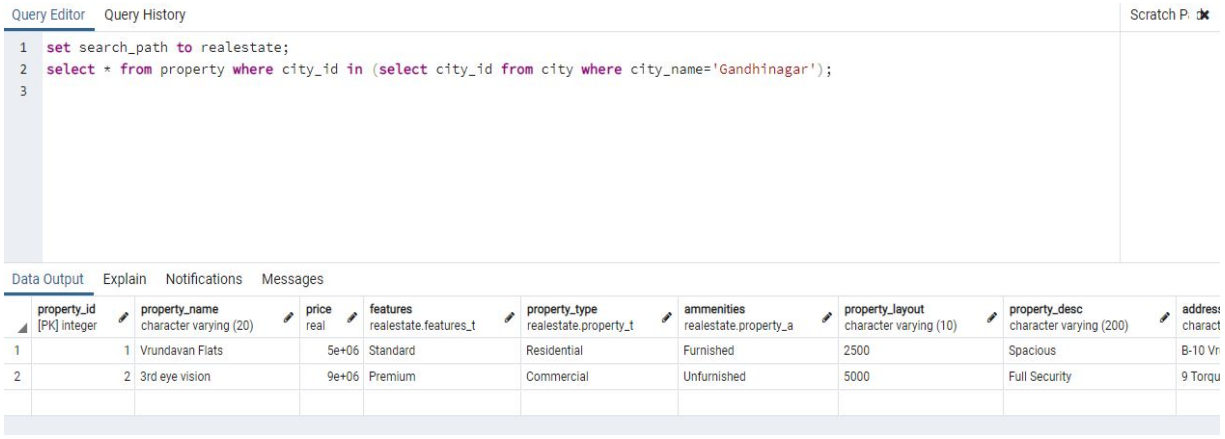
Relational Algebra

r1=($\pi_{(city\_id)}$ ($\sigma_{(city\_name='Gandhinagar')}$ (city)))

result= $\sigma_{(city\_id=r1)}$ (property)

SQL Query

select * from property where city_id in (select city_id from city where city_name='Gandhinagar');



2. Buyer can find the seller name and contact of a particular property by searching by property name.

Relational Algebra

r1=($\pi_{(seller\_id)}$ ($\sigma_{(property\_name='Vrundavan\ Flats')}$ (property)))

result=($\pi_{(name,contact\_no)}$ ($\sigma_{(user\_id=r1)}$ (person $\bowtie_{(person.user\_id=person\_contact.user\_id)}$ person_contact)))

SQL Query

select u.name,pc.contact_no from person as u JOIN person_contact as pc on u.user_id=pc.user_id where u.user_id in (select seller_id from property where

property_name='Vrundavan Flats');

3. Buyer can find the list of all properties and corresponding seller names,contact nos that fall under a particular category(feature) of property that he is interested in buying.

Relational Algebra

($\pi_{(name,contact\_no,property.*)}$ ($\sigma_{(features='Premium')}$ (person $\bowtie_{(person.user\_id=property.seller\_id)}$ property$\bowtie_{(person.user_id=person_contact.user_id)}$ person_contact)))

SQL Query

select u.name,pc.contact_no,p.* from person as u JOIN property as p ON u.user_id = p.seller_id JOIN person_contact as pc on u.user_id=pc.user_id where p.features='Premium';

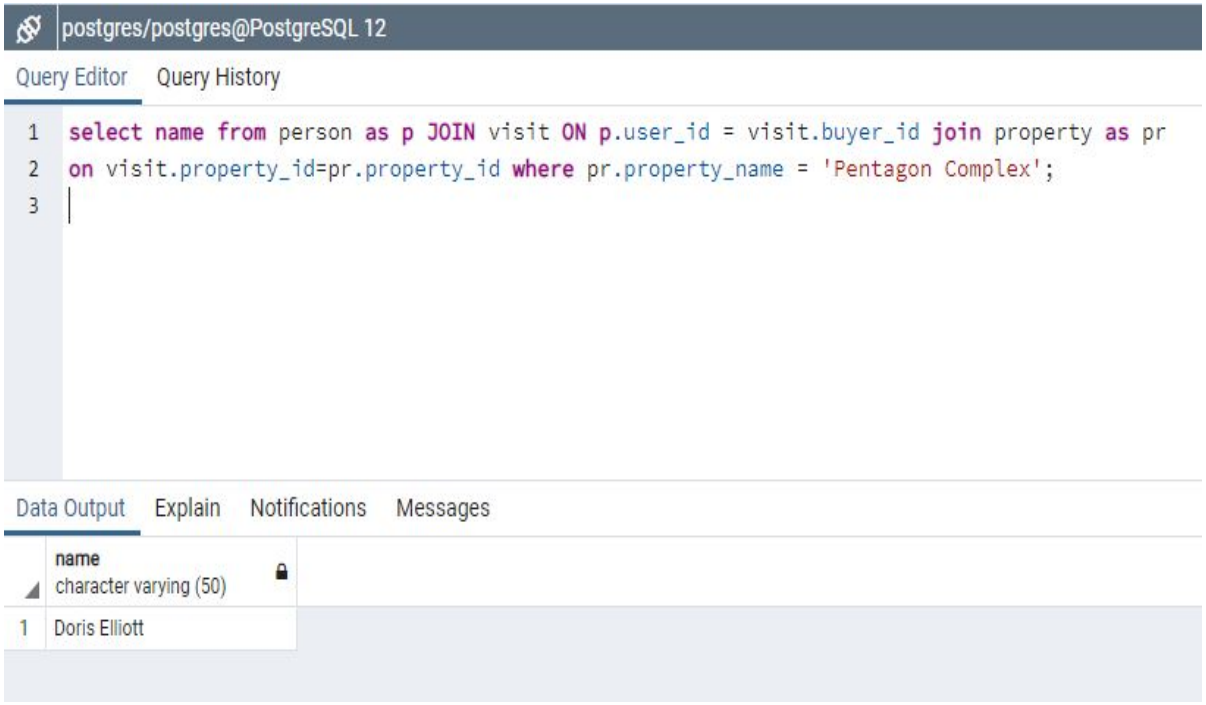
4. Display names of all the buyers who are going to visit property ‘Pentagon Complex’

Relational Algebra

$(\pi_{(name)} (\sigma_{(property\_name='Pentagon\ Complex')} (person \bowtie_{(person.user\_id=visit.buyer\_id)} visit \bowtie_{(property.property\_id=visit.property\_id)} property)))$

SQL Query

```
select name from person as p JOIN visit ON p.user_id = visit.buyer_id join property as pr
on visit.property_id=pr.property_id where pr.property_name = 'Pentagon Complex';
```



5. Display details of all the properties in Gandhinagar city whose price is between 5000000 and 7000000

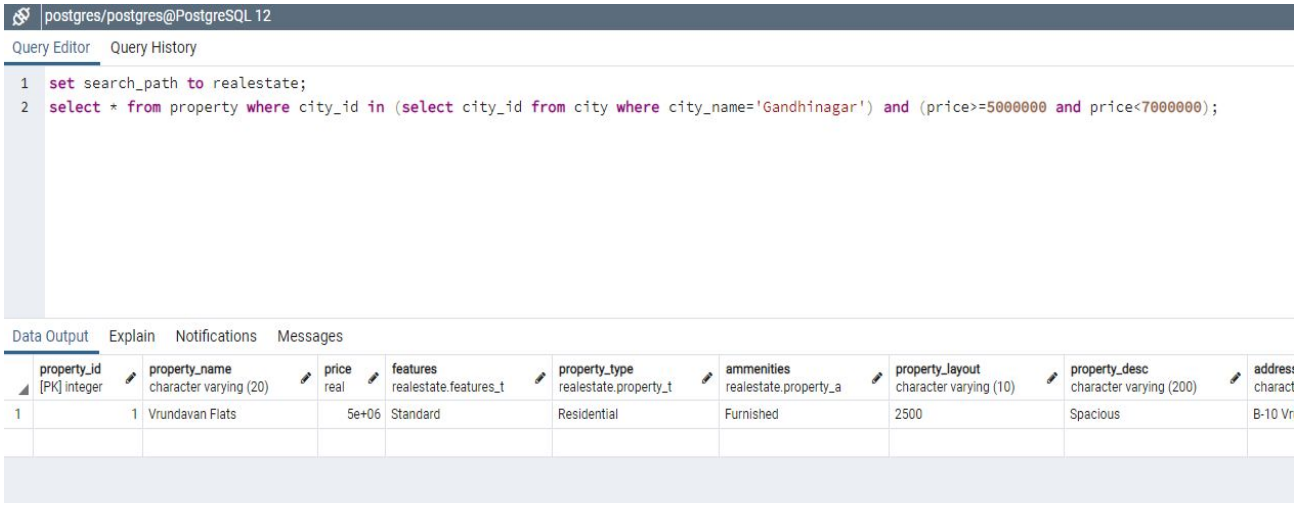
Relational Algebra

r1=($\pi_{(city\_id)}$ ($\sigma_{(city\_name='Gandhinagar')}$ (city)))

result= $\sigma_{(city\_id=r1 \text{ and } price>5000000 \text{ and } price<7000000)}$ (property)

SQL Query

```
select * from property where city_id in (select city_id from city where
city_name='Gandhinagar') and (price>=5000000 and price<7000000);
```



6. Display the details of seller who sold the property to buyer with seller 'Maria Mason' through agent 'William Mendoza'

Relational Algebra

r1=($\pi_{(user\_id)}$ ($\sigma_{(person.name='Maria\ Mason')}$ (person))

r2=($\pi_{(user\_id)}$ ($\sigma_{(person.name='William\ Mendoza')}$ (person))

r3=($\pi_{(user\_id)}$ ($\sigma_{(seller\_id=r1\ and\ agent\_id=r2)}$ (person $\bowtie_{(person.user\_id=property.seller\_id)}$ property)))

result= $\sigma_{(user\_id=r3)}$ (person $\bowtie_{(person.user\_id=person\_contact.user\_id)}$ person_contact)

SQL Query

```
select * from person as u join person_contact as pc on u.user_id=pc.user_id
where u.user_id in

(select person.user_id from person JOIN property ON person.user_id =
property.seller_id WHERE

 property.seller_id = (select person.user_id from person where
person.name='Maria Mason') AND
```

property.agent_id = (select person.user_id from person where person.name='William Mendoza'));

7. Display details to get all the bookings made by a particular buyer.

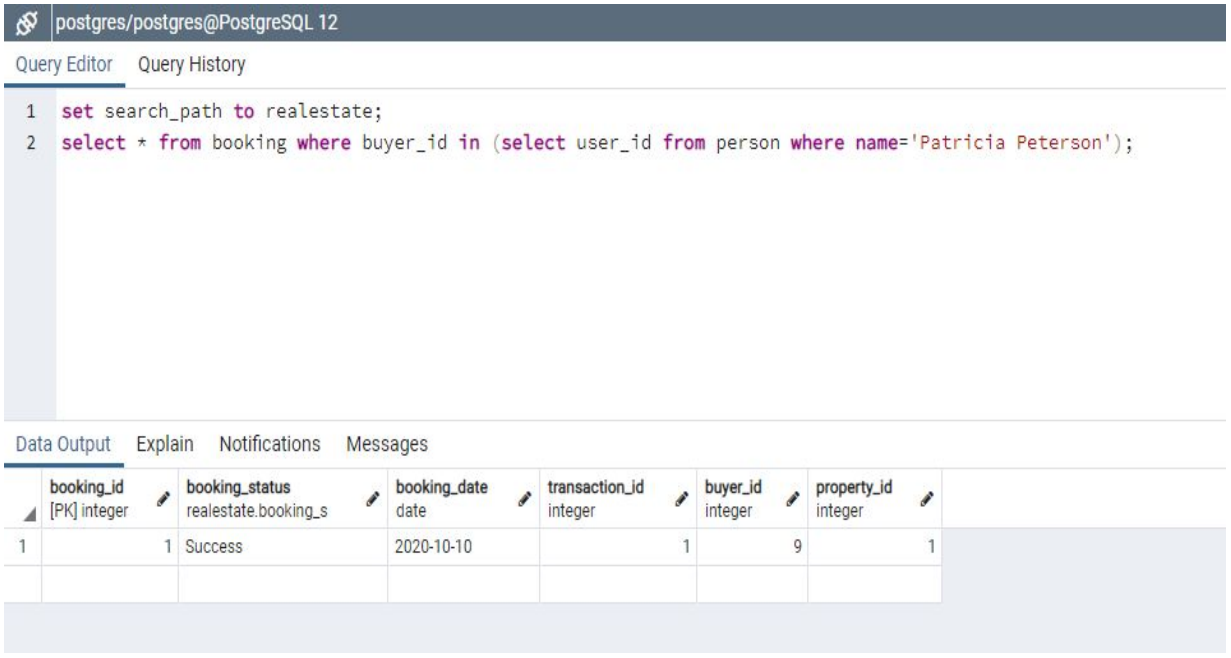
Relational Algebra

r1=($\pi_{(user\_id)}$ ($\sigma_{(name='Patricia\ Peterson')}$ (person)))

result=($\sigma_{(buyer\_id=r1)}$ (booking))

SQL Query

select * from booking where buyer_id in (select user_id from person where name='Patricia Peterson');



8. Display The details of property and name of buyer who have booked the visit on 12/09/2019

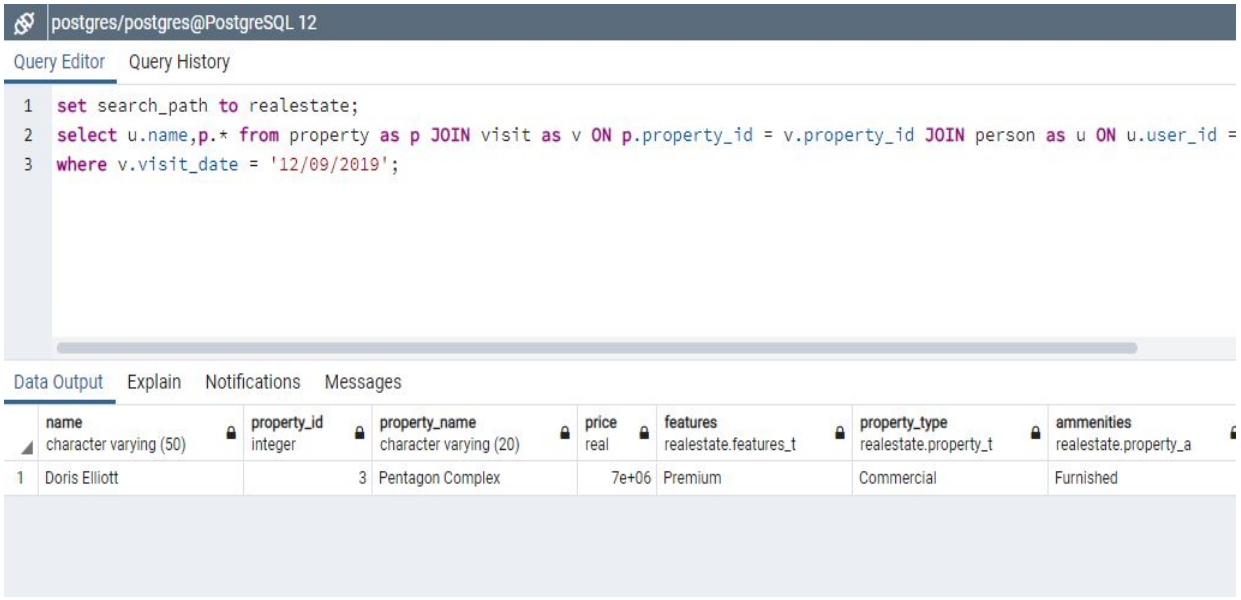
Relational Algebra

r1= $\sigma_{(visit\_date='12/09/2019')}$ (property $\bowtie_{(person.property\_id = visit.property\_id)}$ visit $\bowtie_{(person.user\_id = visit.buyer\_id)}$ person)))

result=($\pi_{(name,property.*)}$ (r1))

SQL Query

```
select u.name,p.* from property as p JOIN visit as v ON p.property_id = v.property_id
JOIN person as u ON u.user_id = v.buyer_id where v.visit_date = '12/09/2019';
```



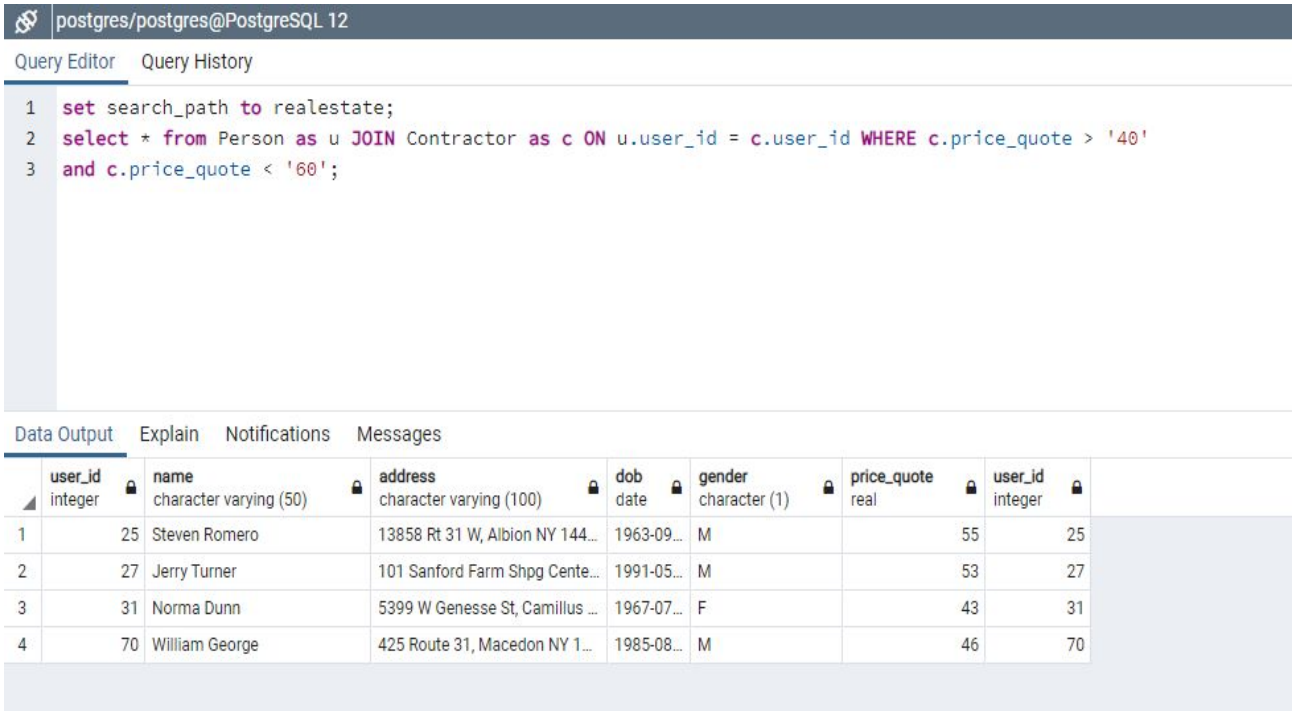
9. Display the details of contractor whose price quote is between 40 and 60.

Relational Algebra

result=($\sigma_{\text{(price\_quote>'40' and price\_quote<'60')}}$ (person $\bowtie_{\text{(person.user\_id = contractor.user\_id)}}$ contractor))

SQL Query

```
select * from Person as u JOIN Contractor as c ON u.user_id = c.user_id WHERE
c.price_quote > '40' and c.price_quote < '60';
```



	user_id integer	name character varying (50)	address character varying (100)	dob date	gender character (1)	price_quote real	user_id integer
1	25	Steven Romero	13858 Rt 31 W, Albion NY 144...	1963-09...	M	55	25
2	27	Jerry Turner	101 Sanford Farm Shpg Cente...	1991-05...	M	53	27
3	31	Norma Dunn	5399 W Genesse St, Camillus ...	1967-07...	F	43	31
4	70	William George	425 Route 31, Macedon NY 1...	1985-08...	M	46	70

10. Display the details of all properties sold by agent ‘Sharon Schmidt’ along with his name.

Relational Algebra

r1=$\pi_{(user\_id)}$($\sigma_{(name='Sharon\ Scmidt')}$ (person ⋈ property)))

r2=($\sigma_{(agent\_id=r1)}$ (person ⋈ property)))

result=($\pi_{(name,property.*)}$ (r2))

SQL Query

Select name,property.* from Property JOIN person ON property.agent_id = person.user_id where

property.agent_id = (select person.user_id from person where person.name='William Mendoza');

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Query Editor | Query History

```
1  Select name,property.* from Property JOIN person ON property.agent_id = person.user_id where
2  property.agent_id = (select person.user_id from person where person.name='William Mendoza');
```

Data Output | Explain | Notifications | Messages

	name character varying (50)	property_id integer	property_name character varying (20)	price real	features realestate.features_t	property_type realestate.property_t	ammenities realestate.property_a
1	Sharon Schmidt	3	Pentagon Complex	7e+06	Premium	Commercial	Furnished
2	Sharon Schmidt	11	Lounge Bunglows	2e+07	Standard	Residential	Furnished